



~8321603.txt
SEQUENCE LISTING

<110> Pulst, Stefan M

<120> METHODS AND COMPOSITIONS FOR THE TREATMENT OF OBESITY

<130> 825466-100151

<140> 10/802,228

<141> 2004-03-16

<160> 2

<170> PatentIn version 3.3

<210> 1

<211> 4481

<212> DNA

<213> Homo sapiens

<400> 1

acccccgaga aagcaacca gcgcgccgcc cgctcctcac gtgtccctcc cggccccggg	60
gccacctcac gttctgcttc cgtctgacct ctccgacttc cggtaaagag tccctatccg	120
cacctccgct cccacccggc gcctcggcgc gcccgccctc cgatgcgctc agcggccgca	180
gtccttcgga gtcccgcggt ggccaccgag tctcgcgct tcgccgcagc caggtggccc	240
gggtggcgct cgctccagcg gccggcgcg cggagcgggc ggggcggcgg tggcgcggcc	300
ccgggaccgt atccctccgc cgccctccc ccgcccggcc ccggcccccc tccctcccgg	360
cagagctcgc ctccctccgc ctcagactgt tttggtagca acggcaacgg cggcggcgcg	420
tttcggcccc gctcccgcg gtccttggt ctcggcgggc ctccccgcc cttcgtcgtc	480
gtccttctcc cctcgcgag cccgggcgcc cctccggccg cgccaaccg cgcctccccg	540
ctcggcgccc gtgcgtcccc gccgcgttc ggcgtctcct tggcgcgccc ggctcccggc	600
tgtccccgcc cggcgtgcga gccggtgtat gggccccctca ccatgtcgt gaagccccag	660
cagcagcagc agcagcagca gcaacagcag cagcagcaac agcagcagca gcagcagcag	720
cagccgccgc ccgcggctgc caatgtccgc aagcccggcg gcagcggcct tctagcgtcg	780
cccgccgcc cgccctcgcc gtccctcgcc tcgggtctcct cgtcctcggc cacggctccc	840
tcctcggtgg tcgcggcgac ctccggcggc gggaggcccc gcctgggcag aggtcgaaac	900
agtaacaaag gactgcctca gtctacgatt tcttttgatg gaatctatgc aaatatgagg	960
atggttcata tacttacatc agttgttggc tccaaatgtg aagtacaagt gaaaaatgga	1020
ggtatatatg aaggagtttt taaaacttac agtccgaagt gtgatttggt acttgatgcc	1080
gcacatgaga aaagtacaga atccagttcg gggccgaaac gtgaagaaat aatggagagt	1140
attttgttca aatgttcaga ctttgttggt gtacagttta aagatatgga ctccagttat	1200
gcaaaaagag atgcttttac tgactctgct atcagtgcga aagtgaatgg cgaacacaaa	1260

gagaaggacc tggagccctg ggatgcaggt gaactcacag ccaatgagga acttgaggct 1320
 ttggaaaatg acgtatctaa tggatgggat cccaatgata tgtttcgata taatgaagaa 1380
 aattatgggtg tagtgtctac gtatgatagc agtttatctt cgtatacagt gcccttagaa 1440
 agagataact cagaagaatt tttaaaacgg gaagcaaggg caaaccagtt agcagaagaa 1500
 attgagtcaa gtgcccagta caaagctcga gtggccctgg aaaatgatga taggagtgag 1560
 gaagaaaaat acacagcagt tcagagaaat tccagtgaac gtgaggggca cagcataaac 1620
 actagggaaa ataaatatat tcctcctgga caaagaaata gagaagtc atcctgggga 1680
 agtgggagac agaattcacc gcgtatgggc cagcctggat cgggctccat gccatcaaga 1740
 tccacttctc acacttcaga tttaacccc aattctgggt cagaccaaag agtagttaat 1800
 ggaggtgttc cctggccatc gccttgccca tctccttcct ctgcccacc ttctcgctac 1860
 cagtcaggtc ccaactctct tccacctcgg gcagccacc ctacacggcc gccctccagg 1920
 cccccctcgc ggccatccag acccccgtct caccctctg ctcatgggtc tccagctcct 1980
 gtcttacta tgcctaaacg catgtcttca gaagggcctc caaggatgtc cccaaaggcc 2040
 cagcgacatc ctgaaatca cagagtttct gctgggaggg gttccatata cagtggccta 2100
 gaatttgtat cccacaaccc acccagtgaa gcagctactc ctccagtagc aaggaccagt 2160
 ccctcggggg gaacgtgggtc atcagtgggtc agtgggggtc caagattatc ccctaaaact 2220
 catagacca ggtctcccag acagaacagt attggaaata cccccagtgg gccagttctt 2280
 gtttctcccc aagctgggtat tattccaact gaagctgttg ccatgcctat tccagctgca 2340
 tctcctacgc ctgctagtcc tgcatcgaac agagctgtta ccccttctag tgaggctaaa 2400
 gattccaggc ttcaagatca gaggcagaac tctcctgcag ggaataaaga aaatattaaa 2460
 cccaatgaaa catcacctag cttctcaaaa gctgaaaaca aaggtatatc accagttggt 2520
 tctgaacata gaaaacagat tgatgattta aagaaattta agaatgattt taggttacag 2580
 ccaagttcta cttctgaatc tatggatcaa ctactaaaca aaaatagaga gggagaaaaa 2640
 tcaagagatt tgatcaaaga caaaattgaa ccaagtgtga aggattcttt cattgaaaaat 2700
 agcagcagca actgtaccag tggcagcagc aagccgaata gcccagcat ttccccttca 2760
 atacttagta acacggagca caagagggga cctgagggtc cttcccaagg ggttcagact 2820
 tccagcccag catgtaaaca agagaaagac gataaggaag agaagaaaga cgcagctgag 2880
 caagttagga aatcaacatt gaatcccaat gcaaaggagt tcaaccacg ttccttctct 2940
 cagccaaagc cttctactac cccaacttca cctcggcctc aagcacaacc tagcccatct 3000
 atgggtgggtc atcaacagcc aactccagtt tatactcagc ctgtttgttt tgcaccaaatt 3060
 atgatgtatc cagtcccagt gagcccaggc gtgcaacctt tataaccaat acctatgacg 3120
 cccatgccag tgaatcaagc caagacatat agagcagtac caaatatgcc ccaacagcgg 3180

~8321603.txt

```

caagaccagc atcatcagag tgccatgatg caccagcgt cagcagcggg cccaccgatt 3240
gcagccaccc caccagctta ctccacgcaa tatgttgcct acagtcctca gcagttccca 3300
aatcagcccc ttgttcagca tgtgccacat tatcagtcctc agcatcctca tgtctatagt 3360
cctgtaatac agggtaatgc tagaatgatg gcaccaccaa cacacgcca gcctgggttta 3420
gtatcttctt cagcaactca gtacggggct catgagcaga cgcatgcgat gtatgcatgt 3480
cccaaattac catacaacaa ggagacaagc ccttctttct actttgccat ttccacgggc 3540
tcccttgctc agcagtatgc gcaccctaac gctaccctgc acccacatac tccacaccct 3600
cagccttcag ctacccccac tggacagcag caaagccaac atggtggaag tcctcctgca 3660
cccagtcctg ttcagcacca tcagcaccag gccgcccagg ctctccatct ggccagtcca 3720
cagcagcagt cagccattta ccacgcgggg cttgcgcca ctccaccctc catgacacct 3780
gcctccaaca cgcagtcgcc acagaatagt ttcccagcag cacaacagac tgtctttacg 3840
atccatcctt ctcacgttca gccggcgat accaaccac cccacatggc ccacgtacct 3900
caggctcatg tacagtcagg aatggttcct tctcatcaa ctgcccacgc gccaatgatg 3960
ctaatacga cacagccacc cggcggtccc caggccgcc tcgctcaaag tgactacag 4020
cccattccag tctcgacaac agcgcatttc ccctatatga cgcacccttc agtacaagcc 4080
caccaccaac agcagttgta aggctgccct ggaggaaccg aaaggccaaa ttccctcctc 4140
ccttctactg cttctacaa ctggaagcac agaaaactag aatttcattt attttgttt 4200
taaaatatat atgttgattt cttgtaacat ccaataggaa tgctaacagt tcacttgacg 4260
tggaagatac ttggaccgag tagaggcatt taggaacttg ggggctattc cataattcca 4320
tatgctgttt cagagtcctg caggtagccc agctctgctt gccgaaactg gaagttattt 4380
attttttaat aacccttgaa agtcatgaac acatcagcta gcaaaagaag taacaagagt 4440
gattcttgct gctattactg ctaaaaaaaa aaaaaaaaaa a 4481

```

<210> 2
 <211> 1312
 <212> PRT
 <213> Homo sapiens

<400> 2

```

Met Arg Ser Ala Ala Ala Ala Pro Arg Ser Pro Ala Val Ala Thr Glu
1          5          10          15

Ser Arg Arg Phe Ala Ala Ala Arg Trp Pro Gly Trp Arg Ser Leu Gln
20          25          30

Arg Pro Ala Arg Arg Ser Gly Arg Gly Gly Gly Gly Ala Ala Pro Gly
35          40          45

```

~8321603.txt

Pro Tyr Pro Ser Ala Ala Pro Pro Pro Pro Gly Pro Gly Pro Pro Pro
50 55 60

Ser Arg Gln Ser Ser Pro Pro Ser Ala Ser Asp Cys Phe Gly Ser Asn
65 70 75 80

Gly Asn Gly Gly Gly Ala Phe Arg Pro Gly Ser Arg Arg Leu Leu Gly
85 90 95

Leu Gly Gly Pro Pro Arg Pro Phe Val Val Val Leu Leu Pro Leu Ala
100 105 110

Ser Pro Gly Ala Pro Pro Ala Ala Pro Thr Arg Ala Ser Pro Leu Gly
115 120 125

Ala Arg Ala Ser Pro Pro Arg Ser Gly Val Ser Leu Ala Arg Pro Ala
130 135 140

Pro Gly Cys Pro Arg Pro Ala Cys Glu Pro Val Tyr Gly Pro Leu Thr
145 150 155 160

Met Ser Leu Lys Pro Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
165 170 175

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Pro Pro Pro Ala Ala
180 185 190

Ala Asn Val Arg Lys Pro Gly Gly Ser Gly Leu Leu Ala Ser Pro Ala
195 200 205

Ala Ala Pro Ser Pro Ser Ser Ser Ser Val Ser Ser Ser Ser Ala Thr
210 215 220

Ala Pro Ser Ser Val Val Ala Ala Thr Ser Gly Gly Gly Arg Pro Gly
225 230 235 240

Leu Gly Arg Gly Arg Asn Ser Asn Lys Gly Leu Pro Gln Ser Thr Ile
245 250 255

Ser Phe Asp Gly Ile Tyr Ala Asn Met Arg Met Val His Ile Leu Thr
260 265 270

Ser Val Val Gly Ser Lys Cys Glu Val Gln Val Lys Asn Gly Gly Ile
275 280 285

Tyr Glu Gly Val Phe Lys Thr Tyr Ser Pro Lys Cys Asp Leu Val Leu
Page 4

290

295

Asp Ala Ala His Glu Lys Ser Thr Glu Ser Ser Ser Gly Pro Lys Arg
305 310 315 320

Glu Glu Ile Met Glu Ser Ile Leu Phe Lys Cys Ser Asp Phe Val Val
325 330 335

Val Gln Phe Lys Asp Met Asp Ser Ser Tyr Ala Lys Arg Asp Ala Phe
340 345 350

Thr Asp Ser Ala Ile Ser Ala Lys Val Asn Gly Glu His Lys Glu Lys
355 360 365

Asp Leu Glu Pro Trp Asp Ala Gly Glu Leu Thr Ala Asn Glu Glu Leu
370 375 380

Glu Ala Leu Glu Asn Asp Val Ser Asn Gly Trp Asp Pro Asn Asp Met
385 390 395 400

Phe Arg Tyr Asn Glu Glu Asn Tyr Gly Val Val Ser Thr Tyr Asp Ser
405 410 415

Ser Leu Ser Ser Tyr Thr Val Pro Leu Glu Arg Asp Asn Ser Glu Glu
420 425 430

Phe Leu Lys Arg Glu Ala Arg Ala Asn Gln Leu Ala Glu Glu Ile Glu
435 440 445

Ser Ser Ala Gln Tyr Lys Ala Arg Val Ala Leu Glu Asn Asp Asp Arg
450 455 460

Ser Glu Glu Glu Lys Tyr Thr Ala Val Gln Arg Asn Ser Ser Glu Arg
465 470 475 480

Glu Gly His Ser Ile Asn Thr Arg Glu Asn Lys Tyr Ile Pro Pro Gly
485 490 495

Gln Arg Asn Arg Glu Val Ile Ser Trp Gly Ser Gly Arg Gln Asn Ser
500 505 510

Pro Arg Met Gly Gln Pro Gly Ser Gly Ser Met Pro Ser Arg Ser Thr
515 520 525

Ser His Thr Ser Asp Phe Asn Pro Asn Ser Gly Ser Asp Gln Arg Val
530 535 540

~8321603.txt

Val Asn Gly Gly Val Pro Trp Pro Ser Pro Cys Pro Ser Pro Ser Ser
545 550 555 560

Arg Pro Pro Ser Arg Tyr Gln Ser Gly Pro Asn Ser Leu Pro Pro Arg
565 570 575

Ala Ala Thr Pro Thr Arg Pro Pro Ser Arg Pro Pro Ser Arg Pro Ser
580 585 590

Arg Pro Pro Ser His Pro Ser Ala His Gly Ser Pro Ala Pro Val Ser
595 600 605

Thr Met Pro Lys Arg Met Ser Ser Glu Gly Pro Pro Arg Met Ser Pro
610 615 620

Lys Ala Gln Arg His Pro Arg Asn His Arg Val Ser Ala Gly Arg Gly
625 630 635 640

Ser Ile Ser Ser Gly Leu Glu Phe Val Ser His Asn Pro Pro Ser Glu
645 650 655

Ala Ala Thr Pro Pro Val Ala Arg Thr Ser Pro Ser Gly Gly Thr Trp
660 665 670

Ser Ser Val Val Ser Gly Val Pro Arg Leu Ser Pro Lys Thr His Arg
675 680 685

Pro Arg Ser Pro Arg Gln Asn Ser Ile Gly Asn Thr Pro Ser Gly Pro
690 695 700

Val Leu Ala Ser Pro Gln Ala Gly Ile Ile Pro Thr Glu Ala Val Ala
705 710 715 720

Met Pro Ile Pro Ala Ala Ser Pro Thr Pro Ala Ser Pro Ala Ser Asn
725 730 735

Arg Ala Val Thr Pro Ser Ser Glu Ala Lys Asp Ser Arg Leu Gln Asp
740 745 750

Gln Arg Gln Asn Ser Pro Ala Gly Asn Lys Glu Asn Ile Lys Pro Asn
755 760 765

Glu Thr Ser Pro Ser Phe Ser Lys Ala Glu Asn Lys Gly Ile Ser Pro
770 775 780

Val Val Ser Glu His Arg Lys Gln Ile Asp Asp Leu Lys Lys Phe Lys
785 790 795 800

~8321603.txt

Asn Asp Phe Arg Leu Gln Pro Ser Ser Thr Ser Glu Ser Met Asp Gln
805 810 815

Leu Leu Asn Lys Asn Arg Glu Gly Glu Lys Ser Arg Asp Leu Ile Lys
820 825 830

Asp Lys Ile Glu Pro Ser Ala Lys Asp Ser Phe Ile Glu Asn Ser Ser
835 840 845

Ser Asn Cys Thr Ser Gly Ser Ser Lys Pro Asn Ser Pro Ser Ile Ser
850 855 860

Pro Ser Ile Leu Ser Asn Thr Glu His Lys Arg Gly Pro Glu Val Thr
865 870 875 880

Ser Gln Gly Val Gln Thr Ser Ser Pro Ala Cys Lys Gln Glu Lys Asp
885 890 895

Asp Lys Glu Glu Lys Lys Asp Ala Ala Glu Gln Val Arg Lys Ser Thr
900 905 910

Leu Asn Pro Asn Ala Lys Glu Phe Asn Pro Arg Ser Phe Ser Gln Pro
915 920 925

Lys Pro Ser Thr Thr Pro Thr Ser Pro Arg Pro Gln Ala Gln Pro Ser
930 935 940

Pro Ser Met Val Gly His Gln Gln Pro Thr Pro Val Tyr Thr Gln Pro
945 950 955 960

Val Cys Phe Ala Pro Asn Met Met Tyr Pro Val Pro Val Ser Pro Gly
965 970 975

Val Gln Pro Leu Tyr Pro Ile Pro Met Thr Pro Met Pro Val Asn Gln
980 985 990

Ala Lys Thr Tyr Arg Ala Val Pro Asn Met Pro Gln Gln Arg Gln Asp
995 1000 1005

Gln His His Gln Ser Ala Met Met His Pro Ala Ser Ala Ala Gly
1010 1015 1020

Pro Pro Ile Ala Ala Thr Pro Pro Ala Tyr Ser Thr Gln Tyr Val
1025 1030 1035

Ala Tyr Ser Pro Gln Gln Phe Pro Asn Gln Pro Leu Val Gln His
1040 1045 1050

~8321603.txt

Val	Pro	His	Tyr	Gln	Ser	Gln	His	Pro	His	Val	Tyr	Ser	Pro	Val
	1055					1060					1065			
Ile	Gln	Gly	Asn	Ala	Arg	Met	Met	Ala	Pro	Pro	Thr	His	Ala	Gln
	1070					1075					1080			
Pro	Gly	Leu	Val	Ser	Ser	Ser	Ala	Thr	Gln	Tyr	Gly	Ala	His	Glu
	1085					1090					1095			
Gln	Thr	His	Ala	Met	Tyr	Ala	Cys	Pro	Lys	Leu	Pro	Tyr	Asn	Lys
	1100					1105					1110			
Glu	Thr	Ser	Pro	Ser	Phe	Tyr	Phe	Ala	Ile	Ser	Thr	Gly	Ser	Leu
	1115					1120					1125			
Ala	Gln	Gln	Tyr	Ala	His	Pro	Asn	Ala	Thr	Leu	His	Pro	His	Thr
	1130					1135					1140			
Pro	His	Pro	Gln	Pro	Ser	Ala	Thr	Pro	Thr	Gly	Gln	Gln	Gln	Ser
	1145					1150					1155			
Gln	His	Gly	Gly	Ser	His	Pro	Ala	Pro	Ser	Pro	Val	Gln	His	His
	1160					1165					1170			
Gln	His	Gln	Ala	Ala	Gln	Ala	Leu	His	Leu	Ala	Ser	Pro	Gln	Gln
	1175					1180					1185			
Gln	Ser	Ala	Ile	Tyr	His	Ala	Gly	Leu	Ala	Pro	Thr	Pro	Pro	Ser
	1190					1195					1200			
Met	Thr	Pro	Ala	Ser	Asn	Thr	Gln	Ser	Pro	Gln	Asn	Ser	Phe	Pro
	1205					1210					1215			
Ala	Ala	Gln	Gln	Thr	Val	Phe	Thr	Ile	His	Pro	Ser	His	Val	Gln
	1220					1225					1230			
Pro	Ala	Tyr	Thr	Asn	Pro	Pro	His	Met	Ala	His	Val	Pro	Gln	Ala
	1235					1240					1245			
His	Val	Gln	Ser	Gly	Met	Val	Pro	Ser	His	Pro	Thr	Ala	His	Ala
	1250					1255					1260			
Pro	Met	Met	Leu	Met	Thr	Thr	Gln	Pro	Pro	Gly	Gly	Pro	Gln	Ala
	1265					1270					1275			
Ala	Leu	Ala	Gln	Ser	Ala	Leu	Gln	Pro	Ile	Pro	Val	Ser	Thr	Thr

~8321603.txt
1290

1280

1285

Ala His Phe Pro Tyr Met Thr His Pro Ser Val Gln Ala His His
1295 1300 1305

Gln Gln Gln Leu
1310

~8321603.txt
SEQUENCE LISTING

<110> Pulst, Stefan M

<120> METHODS AND COMPOSITIONS FOR THE TREATMENT OF OBESITY

<130> 825466-100151

<140> 10/802,228

<141> 2004-03-16

<160> 2

<170> PatentIn version 3.3

<210> 1

<211> 4481

<212> DNA

<213> Homo sapiens

<400> 1

acccccgaga aagcaacca gcgcgccgcc cgctcctcac gtgtccctcc cggccccggg	60
gccacctcac gttctgcttc cgtctgacct ctccgacttc cggtaaagag tccctatccg	120
cacctccgct cccacccggc gcctcggcgc gcccgccctc cgatgcgctc agcggccgca	180
gtcctcggga gtcccgcggt ggccaccgag tctcgcgct tcgccgcagc caggtggccc	240
gggtggcgct cgctccagcg gccggcgcg cgagcgggc ggggcggcg tggcgcgcc	300
ccgggaccgt atccctccgc cgccctccc ccgcccggcc ccggcccccc tccctcccgg	360
cagagctcgc ctccctccgc ctcagactgt tttggtagca acggcaacgg cggcggcgcg	420
tttcggcccgc gtcccggcg gtccttggt ctccggcggc ctccccgcc cttcgtcgtc	480
gtccttctcc ccctcgccag cccgggcgcc cctccggccg cgccaacccg cgcctccccg	540
ctcggcgccc gtgcgtcccc gccgcgttc ggcgctcct tggcgcgccc ggctcccggc	600
tgtccccgcc cggcgtgcga gccggtgtat gggccctca ccatgtcgct gaagccccag	660
cagcagcagc agcagcagca gcaacagcag cagcagcaac agcagcagca gcagcagcag	720
cagccgccgc ccgcggctgc caatgtccgc aagcccggcg gcagcggcct tctagcgtcg	780
cccgcgccgc cgcttcgcc gtctcgtcc tcggtctcct cgtcctcggc cagggctccc	840
tcctcggtagg tcgcggcgac ctccggcggc gggaggcccc gcctgggcag aggtcgaaac	900
agtaacaaag gactgcctca gtctacgatt tcttttgatg gaatctatgc aaatatgagg	960
atggttcata tacttacatc agttgttggc tccaaatgtg aagtacaagt gaaaaatgga	1020
ggtatatatg aaggagtttt taaaacttac agtccgaagt gtgatttggt acttgatgcc	1080
gcacatgaga aaagtacaga atccagttcg gggccgaaac gtgaagaaat aatggagagt	1140
attttgttca aatgttcaga ctttgttggt gtacagtta aagatatgga ctccagttat	1200
gcaaaaagag atgcttttac tgactctgct atcagtgcta aagtgaatgg cgaacacaaa	1260

~8321603.txt

gagaaggacc	tggagccctg	ggatgcaggt	gaactcacag	ccaatgagga	acttgaggct	1320
ttggaaaatg	acgtatctaa	tggatgggat	cccaatgata	tgtttcgata	taatgaagaa	1380
aattatggtg	tagtgtctac	gtatgatagc	agtttatctt	cgtatacagt	gcccttagaa	1440
agagataact	cagaagaatt	tttaaaacgg	gaagcaaggg	caaaccagtt	agcagaagaa	1500
attgagtcaa	gtgcccagta	caaagctcga	gtggccctgg	aaaatgatga	taggagtgag	1560
gaagaaaaat	acacagcagt	tcagagaaat	tccagtgaac	gtgaggggca	cagcataaac	1620
actagggaaa	ataaatatat	tcctcctgga	caaagaaata	gagaagtcac	atcctgggga	1680
agtgggagac	agaattcacc	gcgtatgggc	cagcctggat	cgggctccat	gccatcaaga	1740
tccacttctc	acacttcaga	tttcaacccg	aattctgggt	cagaccaaag	agtagttaat	1800
ggaggtgttc	cctggccatc	gccttgccca	tctccttcct	ctcgcccacc	ttctcgctac	1860
cagtcaggtc	ccaactctct	tccacctcgg	gcagccaccc	ctacacggcc	gccctccagg	1920
ccccctcgc	ggccatccag	acccccgtct	cacccctctg	ctcatgggtc	tccagctcct	1980
gtctctacta	tgcctaaacg	catgtcttca	gaagggcctc	caaggatgtc	cccaaaggcc	2040
cagcgacatc	ctcgaaatca	cagagtttct	gctgggaggg	gttccatatc	cagtggccta	2100
gaatttgtat	cccacaaccc	acccagtga	gcagctactc	ctccagtagc	aaggaccagt	2160
ccctcggggg	gaacgtggtc	atcagtggtc	agtgggggtc	caagattatc	ccctaaaact	2220
catagaccca	ggtctcccag	acagaacagt	attggaaata	cccccagtgg	gccagttctt	2280
gcttctcccc	aagctggtat	tattccaact	gaagctgttg	ccatgcctat	tccagctgca	2340
tctcctacgc	ctgctagtcc	tgcatcgaac	agagctgtta	ccccttctag	tgaggctaaa	2400
gattccaggc	ttcaagatca	gaggcagaac	tctcctgcag	ggaataaaga	aaatattaaa	2460
cccaatgaaa	catcacctag	cttctcaaaa	gctgaaaaca	aaggatatatc	accagttggt	2520
tctgaacata	gaaaacagat	tgatgattta	aagaaattta	agaatgattt	taggttacag	2580
ccaagttcta	cttctgaatc	tatggatcaa	ctactaaaca	aaaatagaga	gggagaaaaa	2640
tcaagagatt	tgatcaaaga	caaaattgaa	ccaagtgccta	aggattcttt	cattgaaaat	2700
agcagcagca	actgtaccag	tggcagcagc	aagccgaata	gccccagcat	ttccccttca	2760
atacttagta	acacggagca	caagagggga	cctgagggtca	cttcccaagg	ggttcagact	2820
tccagcccag	catgtaaaca	agagaaagac	gataaggaag	agaagaaaga	cgcagctgag	2880
caagttagga	aatcaacatt	gaatcccaat	gcaaaggagt	tcaaccacag	ttccttctct	2940
cagccaaagc	cttctactac	cccaacttca	cctcggcctc	aagcacaacc	tagcccatct	3000
atggtgggtc	atcaacagcc	aactccagtt	tatactcagc	ctgtttgttt	tgacacaaat	3060
atgatgtatc	cagtcccagt	gagcccaggc	gtgcaacctt	tatacccaat	acctatgacg	3120
cccatgccag	tgaatcaagc	caagacatat	agagcagtac	caaatatgcc	ccaacagcgg	3180

~8321603.txt

```

caagaccagc atcatcagag tgccatgatg caccagcgt cagcagcggg cccaccgatt 3240
gcagccaccc caccagctta ctccacgcaa tatgttgcct acagtcctca gcagttccca 3300
aatcagcccc ttgttcagca tgtgccacat tatcagcttc agcatcctca tgtctatagt 3360
cctgtaatac agggtaatgc tagaatgatg gcaccaccaa cacacgcca gcctgggtta 3420
gtatcttctt cagcaactca gtacggggct catgagcaga cgatgcgat gtatgcatgt 3480
cccaaattac catacaacaa ggagacaagc ccttctttct actttgccat ttccacgggc 3540
tcccttgctc agcagtatgc gcaccctaac gctaccctgc acccacatac tccacaccct 3600
cagccttcag ctacccccac tggacagcag caaagccaac atggtggaag tcctcctgca 3660
cccagtcctg ttcagacca tcagcaccag gccgcccagg ctctccatct ggccagtcca 3720
cagcagcagt cagccattta ccacgcgggg cttgcgcca ctccaccctc catgacacct 3780
gcctccaaca cgcagtcgcc acagaatagt ttcccagcag cacaacagac tgtctttacg 3840
atccatcctt ctcacgttca gccggcgat accaaccac cccacatggc ccacgtacct 3900
caggctcatg tacagtcagg aatggttcct tctcatcaa ctgcccacgc gccaatgatg 3960
ctaatacga cacagccacc cggcggtccc caggccgcc tcgctcaaag tgcactacag 4020
cccattccag tctcgacaac agcgcatttc ccctatatga cgcacccttc agtacaagcc 4080
caccaccaac agcagttgta aggctgccct ggaggaaccg aaaggccaaa ttccctcctc 4140
ccttctactg cttctaccaa ctggaagcac agaaaactag aatttcattt attttgtttt 4200
taaaatatat atgttgattt cttgtaacat ccaataggaa tgctaacagt tcacttgag 4260
tggaagatac ttggaccgag tagaggcatt taggaacttg ggggctattc cataattcca 4320
tatgctgttt cagagtcctg caggtacccc agctctgctt gccgaaactg gaagttattt 4380
atTTTTTaat aacccttgaa agtcatgaac acatcagcta gcaaaagaag taacaagagt 4440
gattcttgct gctattactg ctaaaaaaaa aaaaaaaaaa a 4481

```

<210> 2
 <211> 1312
 <212> PRT
 <213> Homo sapiens

<400> 2

```

Met Arg Ser Ala Ala Ala Ala Pro Arg Ser Pro Ala Val Ala Thr Glu
1          5          10          15

Ser Arg Arg Phe Ala Ala Ala Arg Trp Pro Gly Trp Arg Ser Leu Gln
20          25          30

Arg Pro Ala Arg Arg Ser Gly Arg Gly Gly Gly Gly Ala Ala Pro Gly
35          40          45

```

~8321603.txt

Pro Tyr Pro Ser Ala Ala Pro Pro Pro Pro Gly Pro Gly Pro Pro Pro
50 55 60

Ser Arg Gln Ser Ser Pro Pro Ser Ala Ser Asp Cys Phe Gly Ser Asn
65 70 75 80

Gly Asn Gly Gly Gly Ala Phe Arg Pro Gly Ser Arg Arg Leu Leu Gly
85 90 95

Leu Gly Gly Pro Pro Arg Pro Phe Val Val Val Leu Leu Pro Leu Ala
100 105 110

Ser Pro Gly Ala Pro Pro Ala Ala Pro Thr Arg Ala Ser Pro Leu Gly
115 120 125

Ala Arg Ala Ser Pro Pro Arg Ser Gly Val Ser Leu Ala Arg Pro Ala
130 135 140

Pro Gly Cys Pro Arg Pro Ala Cys Glu Pro Val Tyr Gly Pro Leu Thr
145 150 155 160

Met Ser Leu Lys Pro Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
165 170 175

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Pro Pro Pro Ala Ala
180 185 190

Ala Asn Val Arg Lys Pro Gly Gly Ser Gly Leu Leu Ala Ser Pro Ala
195 200 205

Ala Ala Pro Ser Pro Ser Ser Ser Ser Val Ser Ser Ser Ser Ala Thr
210 215 220

Ala Pro Ser Ser Val Val Ala Ala Thr Ser Gly Gly Gly Arg Pro Gly
225 230 235 240

Leu Gly Arg Gly Arg Asn Ser Asn Lys Gly Leu Pro Gln Ser Thr Ile
245 250 255

Ser Phe Asp Gly Ile Tyr Ala Asn Met Arg Met Val His Ile Leu Thr
260 265 270

Ser Val Val Gly Ser Lys Cys Glu Val Gln Val Lys Asn Gly Gly Ile
275 280 285

Tyr Glu Gly Val Phe Lys Thr Tyr Ser Pro Lys Cys Asp Leu Val Leu
Page 4

290

295

Asp Ala Ala His Glu Lys Ser Thr Glu Ser Ser Ser Gly Pro Lys Arg
305 310 315 320

Glu Glu Ile Met Glu Ser Ile Leu Phe Lys Cys Ser Asp Phe Val Val
325 330 335

Val Gln Phe Lys Asp Met Asp Ser Ser Tyr Ala Lys Arg Asp Ala Phe
340 345 350

Thr Asp Ser Ala Ile Ser Ala Lys Val Asn Gly Glu His Lys Glu Lys
355 360 365

Asp Leu Glu Pro Trp Asp Ala Gly Glu Leu Thr Ala Asn Glu Glu Leu
370 375 380

Glu Ala Leu Glu Asn Asp Val Ser Asn Gly Trp Asp Pro Asn Asp Met
385 390 400

Phe Arg Tyr Asn Glu Glu Asn Tyr Gly Val Val Ser Thr Tyr Asp Ser
405 410 415

Ser Leu Ser Ser Tyr Thr Val Pro Leu Glu Arg Asp Asn Ser Glu Glu
420 425 430

Phe Leu Lys Arg Glu Ala Arg Ala Asn Gln Leu Ala Glu Glu Ile Glu
435 440 445

Ser Ser Ala Gln Tyr Lys Ala Arg Val Ala Leu Glu Asn Asp Asp Arg
450 455 460

Ser Glu Glu Glu Lys Tyr Thr Ala Val Gln Arg Asn Ser Ser Glu Arg
465 470 475 480

Glu Gly His Ser Ile Asn Thr Arg Glu Asn Lys Tyr Ile Pro Pro Gly
485 490 495

Gln Arg Asn Arg Glu Val Ile Ser Trp Gly Ser Gly Arg Gln Asn Ser
500 505 510

Pro Arg Met Gly Gln Pro Gly Ser Gly Ser Met Pro Ser Arg Ser Thr
515 520 525

Ser His Thr Ser Asp Phe Asn Pro Asn Ser Gly Ser Asp Gln Arg Val
530 535 540

~8321603.txt

Val Asn Gly Gly Val Pro Trp Pro Ser Pro Cys Pro Ser Pro Ser Ser
545 550 555 560

Arg Pro Pro Ser Arg Tyr Gln Ser Gly Pro Asn Ser Leu Pro Pro Arg
565 570 575

Ala Ala Thr Pro Thr Arg Pro Pro Ser Arg Pro Pro Ser Arg Pro Ser
580 585 590

Arg Pro Pro Ser His Pro Ser Ala His Gly Ser Pro Ala Pro Val Ser
595 600 605

Thr Met Pro Lys Arg Met Ser Ser Glu Gly Pro Pro Arg Met Ser Pro
610 615 620

Lys Ala Gln Arg His Pro Arg Asn His Arg Val Ser Ala Gly Arg Gly
625 630 635 640

Ser Ile Ser Ser Gly Leu Glu Phe Val Ser His Asn Pro Pro Ser Glu
645 650 655

Ala Ala Thr Pro Pro Val Ala Arg Thr Ser Pro Ser Gly Gly Thr Trp
660 665 670

Ser Ser Val Val Ser Gly Val Pro Arg Leu Ser Pro Lys Thr His Arg
675 680 685

Pro Arg Ser Pro Arg Gln Asn Ser Ile Gly Asn Thr Pro Ser Gly Pro
690 695 700

Val Leu Ala Ser Pro Gln Ala Gly Ile Ile Pro Thr Glu Ala Val Ala
705 710 715 720

Met Pro Ile Pro Ala Ala Ser Pro Thr Pro Ala Ser Pro Ala Ser Asn
725 730 735

Arg Ala Val Thr Pro Ser Ser Glu Ala Lys Asp Ser Arg Leu Gln Asp
740 745 750

Gln Arg Gln Asn Ser Pro Ala Gly Asn Lys Glu Asn Ile Lys Pro Asn
755 760 765

Glu Thr Ser Pro Ser Phe Ser Lys Ala Glu Asn Lys Gly Ile Ser Pro
770 775 780

Val Val Ser Glu His Arg Lys Gln Ile Asp Asp Leu Lys Lys Phe Lys
785 790 795 800

~8321603.txt

Asn Asp Phe Arg Leu Gln Pro Ser Ser Thr Ser Glu Ser Met Asp Gln
805 810 815

Leu Leu Asn Lys Asn Arg Glu Gly Glu Lys Ser Arg Asp Leu Ile Lys
820 825 830

Asp Lys Ile Glu Pro Ser Ala Lys Asp Ser Phe Ile Glu Asn Ser Ser
835 840 845

Ser Asn Cys Thr Ser Gly Ser Ser Lys Pro Asn Ser Pro Ser Ile Ser
850 855 860

Pro Ser Ile Leu Ser Asn Thr Glu His Lys Arg Gly Pro Glu Val Thr
865 870 875 880

Ser Gln Gly Val Gln Thr Ser Ser Pro Ala Cys Lys Gln Glu Lys Asp
885 890 895

Asp Lys Glu Glu Lys Lys Asp Ala Ala Glu Gln Val Arg Lys Ser Thr
900 905 910

Leu Asn Pro Asn Ala Lys Glu Phe Asn Pro Arg Ser Phe Ser Gln Pro
915 920 925

Lys Pro Ser Thr Thr Pro Thr Ser Pro Arg Pro Gln Ala Gln Pro Ser
930 935 940

Pro Ser Met Val Gly His Gln Gln Pro Thr Pro Val Tyr Thr Gln Pro
945 950 955 960

Val Cys Phe Ala Pro Asn Met Met Tyr Pro Val Pro Val Ser Pro Gly
965 970 975

Val Gln Pro Leu Tyr Pro Ile Pro Met Thr Pro Met Pro Val Asn Gln
980 985 990

Ala Lys Thr Tyr Arg Ala Val Pro Asn Met Pro Gln Gln Arg Gln Asp
995 1000 1005

Gln His His Gln Ser Ala Met Met His Pro Ala Ser Ala Ala Gly
1010 1015 1020

Pro Pro Ile Ala Ala Thr Pro Pro Ala Tyr Ser Thr Gln Tyr Val
1025 1030 1035

Ala Tyr Ser Pro Gln Gln Phe Pro Asn Gln Pro Leu Val Gln His
1040 1045 1050

~8321603.txt

Val 1055	Pro	His	Tyr	Gln	Ser	Gln 1060	His	Pro	His	Val	Tyr 1065	Ser	Pro	Val
Ile 1070	Gln	Gly	Asn	Ala	Arg	Met 1075	Met	Ala	Pro	Pro	Thr 1080	His	Ala	Gln
Pro 1085	Gly	Leu	Val	Ser	Ser	Ser 1090	Ala	Thr	Gln	Tyr	Gly 1095	Ala	His	Glu
Gln 1100	Thr	His	Ala	Met	Tyr	Ala 1105	Cys	Pro	Lys	Leu	Pro 1110	Tyr	Asn	Lys
Glu 1115	Thr	Ser	Pro	Ser	Phe	Tyr 1120	Phe	Ala	Ile	Ser	Thr 1125	Gly	Ser	Leu
Ala 1130	Gln	Gln	Tyr	Ala	His	Pro 1135	Asn	Ala	Thr	Leu	His 1140	Pro	His	Thr
Pro 1145	His	Pro	Gln	Pro	Ser	Ala 1150	Thr	Pro	Thr	Gly	Gln 1155	Gln	Gln	Ser
Gln 1160	His	Gly	Gly	Ser	His	Pro 1165	Ala	Pro	Ser	Pro	Val 1170	Gln	His	His
Gln 1175	His	Gln	Ala	Ala	Gln	Ala 1180	Leu	His	Leu	Ala	Ser 1185	Pro	Gln	Gln
Gln 1190	Ser	Ala	Ile	Tyr	His	Ala 1195	Gly	Leu	Ala	Pro	Thr 1200	Pro	Pro	Ser
Met 1205	Thr	Pro	Ala	Ser	Asn	Thr 1210	Gln	Ser	Pro	Gln	Asn 1215	Ser	Phe	Pro
Ala 1220	Ala	Gln	Gln	Thr	Val	Phe 1225	Thr	Ile	His	Pro	Ser 1230	His	Val	Gln
Pro 1235	Ala	Tyr	Thr	Asn	Pro	Pro 1240	His	Met	Ala	His	Val 1245	Pro	Gln	Ala
His 1250	Val	Gln	Ser	Gly	Met	Val 1255	Pro	Ser	His	Pro	Thr 1260	Ala	His	Ala
Pro 1265	Met	Met	Leu	Met	Thr	Thr 1270	Gln	Pro	Pro	Gly	Gly 1275	Pro	Gln	Ala
Ala	Leu	Ala	Gln	Ser	Ala	Leu	Gln	Pro	Ile	Pro	Val	Ser	Thr	Thr

~8321603.txt
1290

1280

1285

Ala His Phe Pro Tyr Met Thr His Pro Ser Val Gln Ala His His
1295 1300 1305

Gln Gln Gln Leu
1310